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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,932	04/16/2004	David N. Roundhill	US030189	9015

28159 7590 12/15/2004

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EXAMINER	
JAWORSKI, FRANCIS J	
ART UNIT	**PAPER NUMBER**
3737	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/825,932	ROUNDHILL, DAVID N.	
	Examiner	Art Unit	
	Jaworski Francis J.	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *4-16-04 IDS*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4-16-04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

[Parenthesized claim numbers pertain to the specific claim or claims being addressed by the immediately preceding rejection argument.]

Claims 1-2, 4-7, 10, 13, 15, 20 - 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Brooks et al (US6520912).

Brooks et al teaches a method of setting up an ultrasound imaging system comprising:

using the imaging system to display a thumbnail or reduced-size gallery of ultrasound images 730 on display 700, each of which may be obtained using a different modality type setting such as two-dimensional ultrasound imaging or color flow or duplex Doppler, or different view acquisition settings and/or different manufacturers components (col. 7 lines 19-38 and col. 5 lines 54-57) ,

selecting one (720') of the displayed images, and

setting up the ultrasound imaging system 710 using an optimized display resolution of the given setting for the selected ultrasound image, see cols. 5 – 6 bridging). (Claims 1 – 2, 4 – 7, 13).

Since the user selects the image which is automatically optimized for its resolution setting upon selection, it inherently follows that the setting adjustment has a manual initiation. (Claim 10).

With respect to structure, Brooks et al teaches

scanhead transducer array/transmitter/beamformer – col. 7 lines 35 – 40 wherein a beamformer necessarily implies an array transducer in the transmit channels of which to form a beam,

signal processor (includes the receive beamformer) and image processor col. 7 lines 40-48,

video display110, 115 (230),

user interface 210, 250

controller for the signal processor and display processor – application 220 as detailed col. 3 lines 6 – 56 which controls the (conventional portions of the) aforementioned signal and image processors in the fashion discussed in relation to the method. (Claim 15).

The hard drive may be used as a memory intermediate to display, see col. 7 lines 47-48. (Claim 20).

The aforementioned control by application 230-enacted on 130 of the signal and image processors is characterizable as a run-time controller or scan

operation control sequencer in concert with a resolution optimization controller. (Claim 21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 8 – 9, 11- 12, 14, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al since the aforementioned mode options which may be represented within the images or image sets would necessarily arise from combinations of different frequencies/gains/filterings due to the nature of the Doppler acquisition for example (packetizing, colorizing for example) in the case of color Doppler displayand ordinary grey-scale mapping for two-dimensional video screen display during anatomic ultrasound imaging. (Claims 3, 8-9, 14).

Since the user has the opportunity to select the type of examination mode as well as views, it would be inherently obvious to practice a view gallery selection after an examination mode gallery selection to develop the ultrasound patient study for educational presentation as stated. (Claims 11, 12).

It would have been inherently obvious to sequentially change selections regarding mode and/or view otherwise there is no point in having these display alternatives. (Claim 16).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al as applied to claim 15 above, and further in view of Daigle (US5795297) since whereas the former is silent as to buffering, it would have been obvious in view of the latter to provide an RF buffer memory 184 with a (digital) beamformer 90 in order to match acquisition speed of the rayline scanning which comprises the image frame with digital signal processing in a pc-type application such as 230 practiced in 130 of Brooks et al.(Claim 19).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al as applied to claim 15 above, and further in view of Alvarez et al (US6370413) .Whereas the former is silent as to settings transfer between earlier and later obtained images, it would have been obvious in view of Alvarez et al Fig. 2 to bookmark viewing parameters during image frame storage in order that successive image comparisons be made using common obtainance parameter settings. (Claim 22).

Claims 1 –18, 20 – 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Brooks et al and Arima et al (US5293326).

Brooks et al is applied as above regarding automated optimized image display using thumbnail image controls, and in order that the inexperienced user

not be charged with manually effecting the optimization, see col. 3 lines 61 – 67. Whereas in the rejection arguments developed using Brooks et al above the Examiner is interpreting that Brooks et al are optimizing a display parameter setting associated with an image view within a set or are optimizing processing and display parameters associated with an image mode from alternative such modes, and that the use of the system necessarily involve changes in settings of parameter sets and repeated changes or sequences of such changes, if on the other hand a more confining interpretation of Brook et al is adhered to that Brooks et al in and of itself is directed to a single manual selection of an image of a set (potentially the set being of different pathologies or patient specimens or body locations on a patient) which is then optimized for a display setting parameter only, then one may reasonably look to the ultrasound testing art as a whole as represented by Arima et al which is directed to different scan modes (B-mode or C-mode, see col. 3 lines 29 – 37) with need to optimize display settings for these modes and/or color display (see col. 1 lines 23 – 29) and in a user-interface format where thumbnail-type reduced images representing different views or test locations or specimens (semi-conductor, apparently – see Fig. 5) prompt the user to initiate parameter optimization by selection of a view, since Arima et al like Brooks et al is concerned with the issue of operator inexperience/misjudgment (col. 1 – 2 bridging passage) and none of applicant's claims exclude an industrial application or confine to medical examination particulars.

Hence Brooks et al may be viewed as a modern scan implementation (processor hierarchy, beamformers) whose applicability is as stated above and Arima et al as evidentiary that the artisan would extend thumbnail or sub-image control of system settings to processor settings such as pitch or line resolution, gain and to iterative usage where repeat switching between these visual optimization cues would occur, and so either may be considered a base reference or a supplementing reference to the other under the connectivity that both pertain to small-image selection control of automatic.parameter optimizations. (Claims 16 – 18 in particular are then met).

Claims 19, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al and Arima et al as applied to claims above, and further in view of Daigle or Alvarez et al.as these latter are respectively applied against the RF buffer and bookmark features above. (Claims 19 , 22).

Specht et al (US4271842) is directed to using displayed cardiographic ultrasound images 1 – 6 of Fig. 4 to determine whether the temporal or gating parameter for the images is optimized in Fig. 3.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738.

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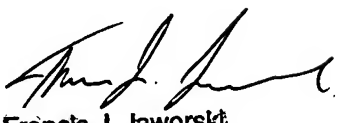

Francis J. Jaworski
Primary Examiner